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UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE BOARD OF PATENT APPEALS
AND INTERFERENCES

Ex parte DESIKACHARI NADADUR and DAVID E. GUSTAFSON

Appeal 2009-005277
Application 10/608,284
Technology Center 2100

Before LANCE LEONARD BARRY, THU A. DANG, and CAROLYN D. THOMAS, *Administrative Patent Judges.*

THOMAS, *Administrative Patent Judge.*

DECISION ON APPEAL[1]

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[1] The two-month time period for filing an appeal or commencing a civil action, as recited in 37 C.F.R. § 1.304, or for filing a request for rehearing, as recited in 37 C.F.R. § 41.52, begins to run from the "MAIL DATE" (paper delivery mode) or the "NOTIFICATION DATE" (electronic delivery mode) shown on the PTOL-90A cover letter attached to this decision.

STATEMENT OF THE CASE

Appellants appeal under 35 U.S.C. § 134(a) from a final rejection of claims 1-9, 11-20, 22-30, and 32-36. We have jurisdiction under 35 U.S.C. § 6(b).

We AFFIRM.

According to Appellants, the invention relates to a medical imaging device, where three display areas are simultaneously displayed. For example, (1) "the first display area displays a medical image"; (2) "the second display area displays a plurality of image frames of the medical image"; and (3) "the third display area displays a data plot." (Spec. 1:18-20).

Claim 1 is illustrative:

A method for displaying a medical image, the method comprising:

displaying a moving medical image of a beating heart in a first display area, wherein the medical image of the beating heart comprises a sequence of image frames;

displaying a plurality of image frames of the sequence of image frames of the medical image in a second display area, wherein the plurality of image frames are acquired at end-diastolic (ED) and end-systolic (ES) portions of the beating heart's cycle; and

displaying a data plot in a third display area;

wherein the first, second, and third display areas are simultaneously displayed.

Rejections

Claims 1-5, 9, 11-20, 22-30, and 32-36 are unpatentable under 35 U.S.C. § 103(a)[2] over Geiser (US 6,708,055 B2, Mar. 16, 2004), Rafter (US 2004/0077952 A1, Apr. 22, 2004), and Kaufman (US 2003/0016852 A1, Jan. 23, 2003).

Claims 6-8 are unpatentable under 35 U.S.C § 103 (a) over Geiser, Rafter, Kaufman, and Gaddipati (US 6,741,672 B2, May 25, 2004).

GROUPING OF CLAIMS

(1) Appellants argue claims 1-5, 9, 11-20, 22-30 and 32-36 on the same basis (*see* App. Br. 4-8). We select independent claim 1 as the representative claim. We will, therefore, treat claims 2-9, 11-20, 22-30 and 32-36 as standing or falling with representative claim 1.

(2) Appellants argue the rejection of claims 6-8 separately (App. Br. 9-11). However, Appellants arguments and the Examiner's findings are substantially similar. Thus, we will address these claims together. *See* 37 C.F.R. § 41.37(c)(1)(vii).

FINDINGS OF FACT (FF)

Geiser Reference

1a. Geiser discloses: "The present invention includes a method for automating video densitometry . . . of scanned images. The first step . . . is to obtain the image in a digital format. A sequence of triggered end diastolic

[2] In the Answer, the Examiner rejects claims 1-5, 9, 11-20, 22-30, and 32-36 under 35 U.S.C. § 102(e), instead of § 103(a). (Ans. 3.) We shall treat this as a typographical error.

images (videotaped or live from the video output of the ultrasound machine) are digitized . . . ." (col. 16, ll. 41-44).

1b. Geiser discloses: "In the preferred embodiment, the inventive method is implemented by means of a computer program on a computer. Echocardiographic images are obtained from an ultrasound system . . . ." (col. 15, ll. 18-21).

1c. Geiser discloses: "Echocardiography is the application of ultrasonic imaging to the heart." (col. 1, ll. 41-42).

1d. Geiser discloses: "the images are typically displayed as visual images." (col. 15, ll. 38).

1e. Geiser discloses: "Next, because the images are digitized from a video source, contain patient data, the ECG, and other irrelevant information . . . are identified so that only sector scan data (ultrasound data) is processed." (col. 16, ll. 49-53).

Rafter Reference

2. Rafter discloses:

> End-systolic pushbutton 761 is associated with logic that identifies and displays diagnostic images acquired in synchronization with the termination of the systolic portion of the patient's heart cycle. End-diastolic pushbutton 763 is associated with logic that identifies and displays diagnostic images acquired in synchronization with the termination of the diastolic portion of the patient's heart cycle. (para. [0089]).

Kaufman Reference

3a. Kaufman discloses:

> FIG. 2 schematically illustrates one exemplary graphical user interface (GUI) 40 of the present invention. GUI 40 is generally displayed on a user output device such as a computer monitor. GUI includes a first screen portion 42 for displaying a selected image, a second screen portion 44 for displaying an ECG that was taken during the image scan, and a third screen portion 46 for displaying a coronal and/or a sagittal image projection of the selected slices . . . . As will be described in detail below, GUI can further include a fourth screen portion 52 that can be toggled between a variety of views to allow a user to select and display various functions, menus, and information. GUI can also include a menu toolbar 53 so as to allow a user to select and toggle between the different functionalities and plug-ins of the software of the present invention. (para. [0061]; *see also* FIGS. 2-6).

3b. Kaufman discloses:

> Fourth screen portion 52 can include an ECG tab 90 which when clicked or otherwise selected by the user will display ECG screen 82 so as to display information about the average length of the R-cycle for the patient for certain intervals of the ECG. In some embodiments, the ECG screen will have a graph which illustrates the duration of the patient's R-R cycle. (para. [0077]; *see also* FIGS. 2-6).

3c. Kaufman discloses: "FIG. 4 illustrates a[] coronal image 50 which was selected during the diastole. In contrast, FIG. 5 illustrates the coronal projection image 50' that was selected during systole. As can be seen in the images, the coronal projection image of the heart during systole is noticeably blurrier." (para. [0091]).

Gaddipati Reference

4. Gaddipati discloses: "When in the real-time mode, if the user chooses to pause the scan, the application will transition to a 'scan paused' state. If scanning is resumed, . . . the application can be edited and edited descriptions will be downloaded even while the scanning is in progress." (col. 8. ll. 52-57).

PRINCIPLES OF LAW

Claim Construction

Claims must "particularly point[] out . . . the subject matter which the applicant regards as his invention." 35 U.S.C. § 112, second paragraph. "[T]he PTO gives claims their 'broadest reasonable interpretation.'" *In re Bigio*, 381 F.3d 1320, 1324 (Fed. Cir. 2004) (quoting *In re Hyatt*, 211 F.3d 1367, 1372 (Fed. Cir. 2000)). During patent examination, claims are given their broadest reasonable interpretation in light of the specification as it would be interpreted by skilled artisans. *Phillips v. AWH Corp.*, 415 F.3d 1303, 1316 (Fed. Cir. 2005) (en banc) (citations omitted).

Obviousness

In rejecting claims under 35 U.S.C. § 103, it is incumbent upon the Examiner to establish a factual basis to support the legal conclusion of obviousness. *See In re Fine,* 837 F.2d 1071, 1073 (Fed. Cir. 1988). If the Examiner's burden is met, the burden then shifts to the Appellants to overcome the prima facie case with argument and/or evidence. Obviousness is then determined on the basis of the evidence as a whole and the relative persuasiveness of the arguments. *See In re Oetiker,* 977 F.2d 1443, 1445

(Fed. Cir. 1992).

ANALYSIS

Claims 1-9, 11-20, 22-30 and 32-36

Issue 1a: Did the Examiner err in finding that Rafter teaches or suggests, "displaying a plurality of image frames . . . , wherein the plurality of image frames are acquired at end-diastolic (ED) and end-systolic (ES) portions of the beating heart's cycle," as set forth in claim 1?

Appellants argue "independent Claims 1, 17, and 27 each recite elements relating to displaying a plurality of image frames of the sequence of image frames acquired at ***both*** end-diastolic (ED) ***and*** end-systolic (ES) portions of the beating heart's cycle" (App. Br. 5-6). Appellants contend that Rafter "merely teaches the use of the end-systolic pushbutton 761 and the end-diastolic pushbutton 763 to view image frames at the *same portion* of the cardiac cycle - *either* at end systole (when the end-systolic pushbutton 761 is pushed) or end of diastole (when the end-diastolic pushbutton 763 is pushed" (App. Br. 5) (emphasis omitted).

The Examiner finds that "Rafter teaches that the operator interface can do both: display images acquired at ES and display images acquired at ED (. . . ; via selection of elements 761 and 763)" (Ans. 9). Further, the Examiner finds that "the claim language does not require that images acquired at ES and ED be simultaneously displayed." (Ans. 9). We agree with the Examiner.

For example, claim 1 recites "displaying a plurality of image frames . . . in a second display area, wherein the plurality of image frames are acquired at end-diastolic (ED) and end-systolic (ES) portions of the beating heart's cycle" (App. Br. 12, Claims App'x). We construe this portion of claim 1 as simply requiring that both ES and ED images are acquired and displayed. However, this portion of claim 1 does not require that the ES and ED images are simultaneously acquired (as this is impossible to do). All that is required is that both ES and ED images be acquired and later displayed in the second display.

Rafter teaches acquiring and displaying end-diastolic (ED) and end systolic (ES) images (*see* FF 2). Thus, we find that the claimed "displaying a plurality of image frames . . . acquired at end-diastolic (ED) and end-systolic (ES)" *reads on* Rafter's end-systolic pushbutton function and end-diastolic pushbutton function.

We note that while representative claim 1 recite that "the first, second, and third display *areas* are simultaneously displayed" in the last line (*see* Claims App'x) (emphasis added), claim 1 does not recite that "the plurality of image frames acquired at the end-diastolic (ED) and end-systolic (ES) portions of the beating heart's cycle" are simultaneously displayed. Claim 1, as written, only requires simultaneously displaying the areas, not the images therein.

As for simultaneously displaying the areas, we find that the combination of Geiser, Rafter, and Kaufman discloses this limitation. For example, Geiser suggests displaying a beating heart in a first display area, as Geiser teaches Echocardiogram images (*i.e.* images of the heart) in a video

(where video captures movement) (*see* FF 1a-1e). As noted *supra,* Rafter suggests acquiring and displaying ES and ED images (*see* FF 2). Kaufman teaches simultaneously displaying (1) an image in a first display area (*i.e.,* a first screen portion 42 for displaying a selected image); (2) a second display area for displaying a plurality of images (*i.e.*, a third screen portion 46 for displaying a coronal and/or a sagittal image projection of the selected slices); and (3) a third display area for displaying a graphical representation (*i.e.*, the forth screen portion for displaying an ECG screen that may have a graph) (*see* FF 3a-3b).

Thus, we find that the combination of Geiser, Rafter, and Kaufman teaches or suggests simultaneously displaying (1) a first display area for displaying the moving medical image of the beating heart, as shown in Geiser; (2) a second display area for displaying the acquired ED and ES images, as shown in Rafter; and (3) a third display area for displaying a graphical representation, as disclosed in Kaufman, given that Kaufman clearly shows that is was known to simultaneously display multiple areas of information. (*see* FF 3a).

Additionally, Appellants make general allegations that the proposed combination does not teach the language for claims 17 and 27 (App. Br. 8). Appellants are reminded that a general allegation that the claims define a patentable invention without specifically pointing out how the language of the claims patentably distinguishes them from the references does not constitute a persuasive response. Here, Appellants merely argue that neither reference teaches or suggests the above-noted limitations without providing any meaningful analysis that explains why the Examiner erred. (App. Br. 8.) A statement which merely points out what a claim recites will not be

considered an argument for separate patentability of the claim. *See* 37 C.F.R. § 41.37(c)(1)(vii). We note that arguments which Appellants could have made but chose not to make in the Briefs have not been considered and are deemed to be waived. Therefore, Appellants' arguments are unpersuasive.

Issue 1b: Did the Examiner err in combining Geiser, Rafter, and Kaufman?

Appellants argue "that one skilled in the art would not have combined Geiser et al., Rafter et al., and Kaufman et al. because Kaufman et al. teaches away from such a combination." (App. Br. 7). Appellants contend "Kaufman et al. desires to obtain and display a still image of the heart," and "Kaufman et al. views heart motion as noise that will cause blurring of the image." (*Id.*).

We find that Kaufman discloses various screen portions on a graphical user interface (FFs 3a-3b). Kaufman further discloses that blurring of mages can occur during syslote (FF 3c). However, we do not readily find, and Appellants have not established, that Kaufman criticizes, discredits, or otherwise discourages the use of images obtained during systole. "[The prior art's mere disclosure of more than one alternative does not constitute a teaching away from any of these alternative because such disclosure does not criticize, discredit, or otherwise discourage the solution claimed . . . ." *In re Fulton*, 391 F.3d 1195, 1201 (Fed. Cir. 2004).

"A reference may be said to teach away when a person of ordinary skill, upon reading the reference . . . would be led in a direction divergent from the path that was taken by the applicant." *In re Haruna*, 249 F.3d 1327, 1335 (Fed. Cir. 2001). We do not find this to be the situation before this Board. At most it can be argued, "motion would degrade the image." However, we find that being less effective is not a teaching away. "A known or obvious composition does not become patentable simply because it has been described as somewhat inferior to some other product for the same use." *In re Gurley,* 27 F.3d 551, 554 (Fed. Cir. 1994).

Here, we find that Kaufman's noted blurred image, while somewhat inferior, is not being discredited from being used all together. Thus, Appellants arguments relating to "teaching away" are unpersuasive.

Claims 6-8

Issue 2a: Did the Examiner err in finding that the combination of Geiser, Rafter, Kaufman, and Gaddipati teaches or suggests the suspending/pausing features as set forth in claims 6-8?

Appellants argue Gaddipati, as cited by the Examiner, fails to teach "receiving a selection of the medical image in the first display area and pausing the display of the medical image, as recited in Claim 6." (App. Br. 9-10). Appellants contend Gaddipati "merely teaches transitioning to a 'scan paused' state when a user chooses to pause a scan" (App. Br. 9). Similar arguments are made for claims 7 and 8.

With regard to claims 6 and 7, the Examiner finds that "the modified Geiser teaches a method for displaying a medical image wherein

(a) comprises receiving a selection of the medical image in the first display area (Kaufman: sections [0070] and [0073])" (Ans. 8). The Examiner cites column 8, lines 52-63 of Gaddipati, and finds that Gaddipati teaches pausing the display of the medical image or suspending a medical image acquisition operation. (Ans. 8). In other words, the Examiner relies upon the combined teachings of Geiser and Kaufman to teach selecting a display area (Ans. 8). Appellants do not dispute this finding. The Examiner imports Gaddipati to merely teach pausing the display (*id.)*.

Gaddipati teaches pausing a scan that is occurring in real-time (*see* FF 4). Thus, Gaddipati suggests pausing (*i.e.*, suspending) a medical image acquisition (*i.e.,* real-time scan).

Here, Appellants' arguments focus on the difference between the limitations of claim 6 and the teachings of the Gaddipati reference. It is apparent, however, from the Examiner's line of reasoning in the Answer (*see* Ans. 8), that the basis for the obviousness rejection is the combination of teachings of the Geiser, Kaufman, and Gaddipati references, as the Examiner relies on (1) the combination of Geiser and Kaufman for suggesting "receiving a selection of the medical image in the first display area" and (2) Gaddipati for teaching "pausing the display of the medical image or suspending a medical image acquisition operation" (*see* Ans. 8). One cannot show nonobviousness by attacking references individually where the rejections are based on combinations of references. *In re Merck & Co.*, 800 F.2d 1091, 1097 (Fed. Cir. 1986); *In re Keller*, 642 F.2d 413, 425 (CCPA 1981).

Additionally, Appellants make a general allegation that the cited text does not teach the language for each of these claims. Appellants are

reminded that a statement that merely points out what the claim recites will not be considered as an argument for separate patentability of the claim. 37 C.F.R. § 41.37(c)(1)(vii). Appellants are further reminded that a general allegation that the claims define a patentable invention without specifically pointing out how the language of the claims patentably distinguishes them from the references does not constitute a persuasive response. 37 C.F.R. § 1.111(b). Therefore, Appellants' arguments are unpersuasive.

Thus, Appellants have *not* persuaded us of error in the Examiner's conclusion of obviousness for claims 6-8. Therefore, we affirm the Examiner's § 103 rejection of claims 6-8.

DECISION

The Examiner's rejection of claims 1-5, 9, 11-20, 22-30, and 32-36 under 35 U.S.C. § 103(a), as being obvious over Geiser, Rafter and Kaufman, is affirmed.

The Examiner's rejection of claims 6-8 under 35 U.S.C § 103 (a), as being obvious over Geiser, Rafter and Kaufman and Gaddipati, is affirmed.

No time period for taking any subsequent action in connection with this appeal may be extended under 37 C.F.R. § 1.136(a)(1)(iv) (2009).

AFFIRMED

Erc

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